REVIEW OF THE

Oregon Sea Grant College Program

BRIEFING BOOK September 23–24, 2014

Sea Grant Oregon

NOAA

OSU Oregon State University

Contents

Tables and Figures

Program Management and Organization

Oregon Sea Grant Leadership Team

Oregon Sea Grant (OSG) is an integrated program of extension, education, communications, and research that works to address critical coastal issues and helps people understand, rationally use, and conserve marine and coastal resources. The period since September 2013 has been a time of transition for OSG leadership. Stephen Brandt officially stepped down then as director after four-and-a-half years in the position. The Oregon State University (OSU) vice president for research, Rick Spinrad, named associate vice president for research, George R. (Rich) Holdren, as interim director, a role that, given Holdren's other duties, could not be full-time. After an extensive nationwide search, which involved OSG Leadership Team members on the search committee and an extensive interview process involving not only OSG but many of our institutional partners, Spinrad named Shelby Walker the new full-time OSG director. Holdren's tenure as interim director concluded in July 2014 with the arrival of Walker, who previously was the strategic planning team leader in NOAA's Office of Oceanic and Atmospheric Research.

During this period of transition from 2013 to 2014, the continuing members of the Leadership Team (LT) kept the OSG ship sailing ahead, with interim director Holdren's support and guidance. The LT actively engages each other on a frequent basis through daily discussions on items as they arise and through weekly meetings. The team addresses and implements program priorities and goals, sets strategic policy and procedures, makes funding and personnel decisions, and continuously seeks opportunities to enhance the program. The LT routinely seeks direct input from faculty and the Advisory Council through group meetings, occasional conference calls, and direct contacts and e-mails.

Leadership Team members and their responsibilities are:

Shelby Walker, Ph.D., program director, is responsible for overall leadership and direction, management, and administration of OSG; integration at the university, state, regional, and national levels; and final oversight of all staff. The director reports to the university's vice president for research.

David Hansen, Ph.D., Outreach and Engagement program leader, has been primarily responsible for leading OSG Extension and— since the start of the current Omnibus period in February 2014—coordinating and leading our new outreach and engagement framework. In that capacity, Hansen also manages OSG's Free-Choice Learning Education faculty and staff at the Hatfield Marine Science Center. Hansen joined OSG leadership in 2010.

Joseph Cone, MA, assistant director and Communications leader, conducts communications research and leads staff development of plans, publications, videos, and other science-communication materials, and the websites and social media of the program, all of which support the communication objectives of OSG administration, faculty, and researchers. Cone joined OSG leadership in 1993.

Melissa Metz, MEd, Operations leader, oversees administrative operations for OSG. She supervises and leads the support staff in carrying out the operational services for OSG faculty and programs. Metz also oversees all budgetary and fiscal aspects of the program. She joined OSG leadership in 2012.

Sarah Kolesar, Ph.D., Research and Scholars program leader, leads OSG's research and scholars programs, which includes coordination of various competitive research activities and the program development granting process. Kolesar manages several competitive student award opportunities, both internal and external to our program, and is responsible for students and fellows in the Sea Grant Scholars program. Kolesar joined OSG leadership in 2012.

Shifting to a New Approach

Every four years, OSG drafts a plan to guide its activities during the next four-year federal funding cycle. An important effort during the current funding cycle is initiating an Outreach and Engagement (O&E) framework for the organization. This new framing will include relevant portions of all our programmatic elements (Communications, Free-Choice Learning Education, Extension, and Research). The first step toward this O&E structure was combining the Extension and Free-Choice Learning Education elements.

Our O&E group currently includes individuals in OSG Extension, Free-Choice Learning, Marine Education, and the Hatfield Marine Science Center (HMSC) Visitor Center. These individuals are located on the OSU main campus, at the HMSC, and in four coastal communities. They work closely with other OSG program elements to address programmatic priorities.

Though not yet part of the O&E structure, communicators continuously collaborate across the program on a wide

range of projects. The communicators are actively engaged in the operation of the O&E framework, teams, and communities of practice. In addition, Communications staff will continue to devote a substantial amount of effort to meeting planned outcomes and other communication functions separate from the O&E framework. An O&E strategy that incorporates research, which includes activities of OSG personnel, projects funded by OSG, and collaborations with external partners, is an eventual outcome of this new framework.

Advisory Council Function and Membership

Oregon Sea Grant's citizen Advisory Council helps ensure the program meets the needs and priorities of Oregon's ocean and coastal communities, businesses, and policymakers. Council members are drawn from the geographic diversity of the state and coast and from a broad range of coastal interests: private sector, community groups, local government, resource management agencies, and others with a stake in Oregon's ocean and coasts. The Council typically meets twice yearly, but regularly engages with OSG during proposal and fellowship review processes. Members bring their knowledge, representing themselves only, in guiding, planning, evaluating, communicating, and promoting the program. Specifically, the Council

- applies technical, professional, and experiential knowledge in shaping the vision of the program and in marshaling its resources
- conducts evaluations of research priorities, particularly focused on societal relevance of research pre-proposals and full proposals
- participates on university and program committees, including search committees
- provides community-of-place and community-of-interest input during strategic planning and in assessing accomplishments
- alerts the program to emerging issues, as well as serving as a forum for discussion on the trajectory of the program
- interacts with stakeholders to increase awareness of program activities, and transmits the challenges, needs, and opportunities of stakeholders with the program
- assists in the formation of strategic partnerships, promotes the value of the program within the university (on the coast, within the state, and regionally and nationally), and helps build the program's capacity

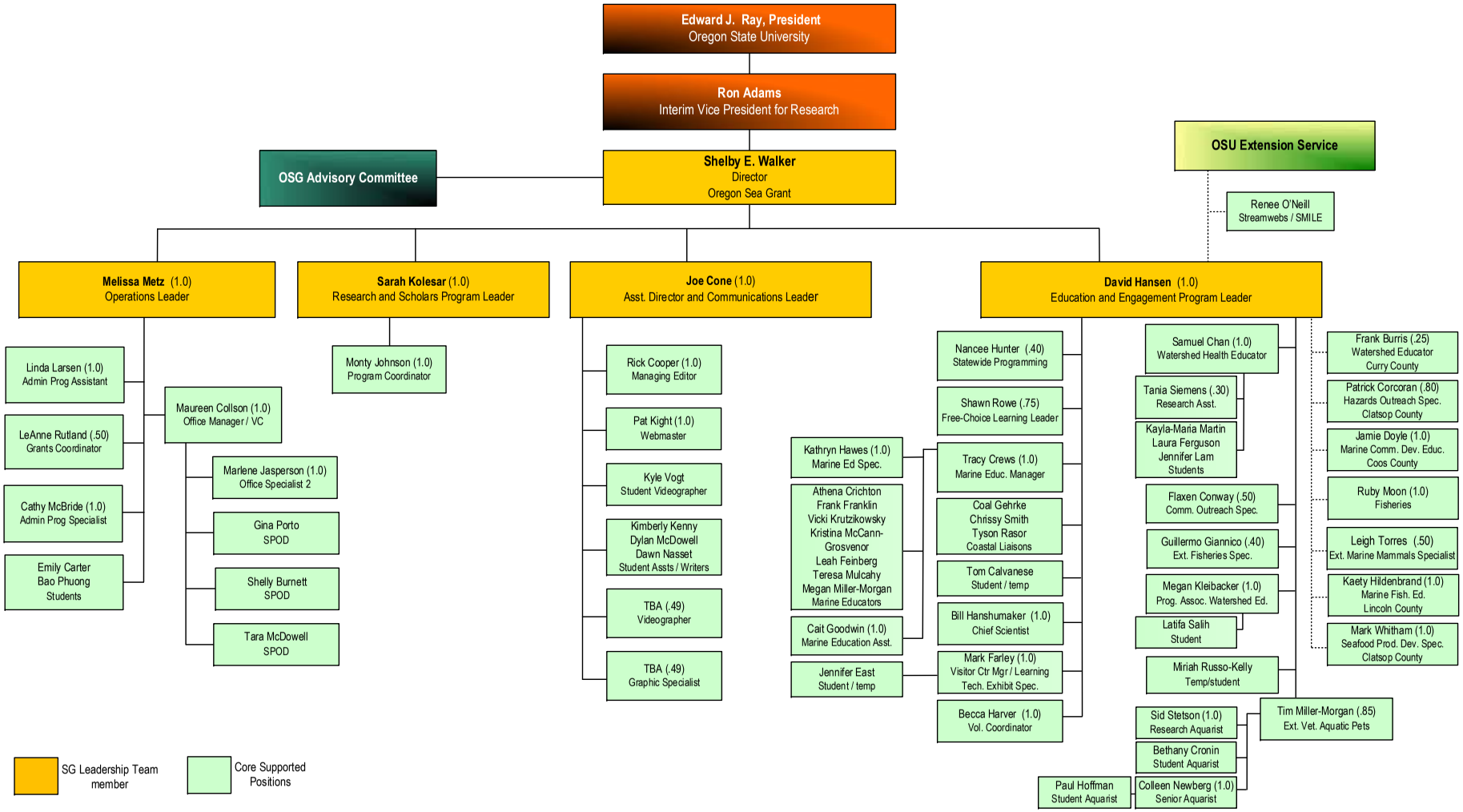
Current Advisory Council Members

- **Xanthippe Augerot**, Corvallis, OR. Executive director, Marys River Watershed Council
- **Kirk Beiningen**, Milwaukie, OR. Retired, Oregon Department of Fish and Wildlife
- **Anne Berblinger**, Portland, OR. Retired, US Department of Commerce Economic Development Administration; small farm owner
- **Caren Braby**, Newport, OR. Manager of the Marine Resources Program at Oregon Department of Fish and Wildlife
- **Ellie Dumdi**, Junction City, OR. Past member, Lane County Board of Commissioners
- **Valerie Folkema**, Bay City, OR. President of the Port of Garibaldi. Founding member of Tillamook Estuaries Partnership
- **Peter Huhtala**, Astoria, OR. Executive director of Columbia River Business Alliance; current County Commissioner. Current member of the Oregon Coastal Zone Management Association
- **Jay Rasmussen**, Toledo, OR. Former Oregon Sea Grant associate director and Extension program leader
- **Allan Rumbaugh**, Tigard, OR. Retired, general manager, Oregon International Port of Coos Bay
- **William Schreiber**, Bay City, OR. Owner, FV Captain Ryan; current member of ODFW Developmental Fisheries Board, Port Authority
- **Craig Young**, Charleston, OR. Professor of biology, University of Oregon; and director of the Oregon Institute of Marine Biology

Strategic Planning Processes/Team Approach

The 2014–2017 OSG Strategic Plan was shaped by our faculty, staff, stakeholders, and Advisory Council. We began with a diverse strategic planning committee, under the leadership of David Hansen and composed of faculty and staff in the program's Communication, Education, Extension, and Research administrative elements, all of whom had previous experience with strategic planning. The process built on previous efforts and focused on integration across our program elements.

Oregon Sea Grant
Organizational Chart



The committee's initial concepts were refined during a meeting of staff and the OSG citizen Advisory Council. This meeting provided a venue for reflecting on past successes and challenges and advancing concepts for new initiatives to address critical and emerging concerns. The resulting published plan is aligned, by intent, with the strategies outlined in the 2014–2017 strategic plan of the National Sea Grant College Program, and the relevant goals of the National Oceanic and Atmospheric Administration and Oregon State University.

A fundamental element of strategic planning and thinking is framing the issues: what issues we work on, how we work on them, and what we expect to accomplish through our efforts. In a program with diverse expertise and interests, the challenge is to describe these issues in a way that clearly communicates our programmatic priorities, both within the organization and to interested parties outside of OSG. To this end, we have adopted four focus areas identified in the National Sea Grant Strategic Plan:

- Healthy Coastal Ecosystems
- Sustainable Fisheries and Aquaculture
- Resilient Communities and Economies
- Environmental Literacy and Workforce Development

These focus areas help to define our programmatic priorities. However, the focus areas are best understood as lenses through which to view our program, rather than as discrete categories. For example, our programming in aquatic invasive species can be viewed as affecting the health of coastal ecosystems, but it is equally valid to view this work through the lens of sustainable fisheries or improving environmental literacy.

Each focus area includes two or more strategic goals; there are a total of 11 goals across the four focus areas. Since our programming nearly always addresses more than one focus area, these 11 goals are often interdependent and progress toward any one of them will inevitably address others.

Each strategic goal includes a series of outcomes. Outcomes are benchmarks for tracking progress toward strategic goals. Three types of outcomes are included in this plan: learning, action, and consequence.

- Learning (short-term) outcomes lead to increased awareness, knowledge, skills, changes in attitudes, opinions, aspirations, or motivations through research and/or stakeholder engagement.
- Action (medium-term) outcomes lead to behavior change, social action, adoption of information, improved decision-making, or changes in policies.
- Consequence (long-term) outcomes may require focused efforts over multiple strategic planning cycles.

The program will continue to think strategically about its investments and areas of effort, particularly as needs and resources evolve.

Institutional Setting within the University

Oregon Sea Grant is headquartered at Oregon State University in Corvallis. Oregon State University (OSU) is one of two land-, sea-, sun-, and space-grant universities nationwide and is the only Oregon university to hold the Carnegie Foundation's prestigious designation reserved for universities with "very high research activity." In 2011, the Carnegie Foundation also awarded OSU the "Community Engagement" designation, reflective of the university's many and close ties with the communities and public it serves.

In 2014, more than 37 percent of OSU research expenditures were directly tied to marine-related issues or programs, with 17 marine-oriented entities and nearly $100M of research annually. This provides an excellent academic setting for Oregon Sea Grant (OSG). The Research Office provides the OSG program more than $1M of direct base support every year.

OSG's director, Shelby Walker, reports to the OSU interim vice president for research, Ron Adams. OSG has had a close relationship with the Office of the Vice President for Research for many years, demonstrated most recently with the appointment of the associate vice president for research, Rich Holdren, serving as interim OSG director from September 2013 through June 2014.

OSG leadership also has direct integration with statewide Extension, led by the OSU vice provost and director of the OSU Division of Outreach and Engagement, Scott Reed. OSU Extension provides OSG an annual block grant of more than $700K. OSG Extension faculty members have academic appointments in four colleges (Agriculture; Earth, Ocean, and Atmospheric Sciences; Veterinary Medicine; and Education) and a number of departments at OSU. Many O&E faculty hold academic rank and are housed on campus and in offices along the coast. OSG has connections with many other OSU departments and colleges, including Fisheries and Wildlife and Food Science.

In addition, OSG maintains close relationships with several OSU research facilities on the Oregon coast, including the OSU Hatfield Marine Science Center in Newport and the OSU Seafood Laboratory in Astoria. OSG also works closely with research facilities outside of OSU, such as the Oregon Institute of Marine Biology in Charleston.

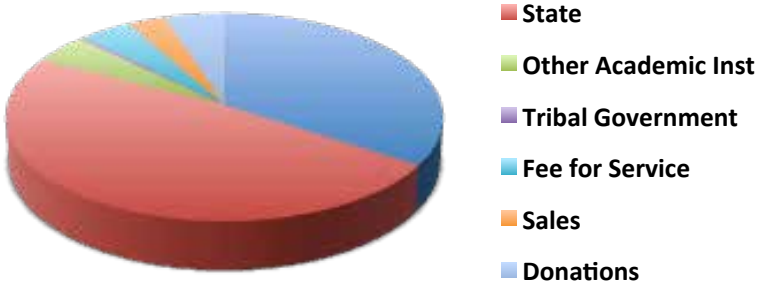
Financial Setting and Leveraged Funding

OSG currently works in an environment of increased competition for few federal funding opportunities, increased competition for non-federal sources, and a growing reliance on a diverse funding portfolio. Given that core federal or state funds are either remaining constant or shrinking, OSG will seek to improve efficiencies with current resources while continuing to build stakeholder networks to collaboratively identify coastal issues and connecting those issues with scientific talent and related assistance, to produce research-based tools and solutions for real-world application. The combined support from NOAA, OSU's Research Office, and the Extension Service is key to OSG's continued success, as these funding streams provide the core capacity that makes us viable and competitive.

Leveraged dollars come in three flavors: federally required match, other managed funds, and influenced funds. Considering the match and other managed funds together, our overall leveraging is nearly one-and-a-half times greater than our federal dollars in direct income. Influenced funds are those that OSG didn't administer or manage but used to accomplish the goals and objectives in our four-year plan. OSG accounted for $47M in influenced funds between 2010–2013 that enhanced our efforts in research, education, communications, and extension. Managed funds have leveled out these past four years, averaging $2.7M/year. OSG funding sources are diverse and include: direct OSU allocation, fee for service, sales, donations, a diversity of organizational support, such as from state agencies, nonprofits, local and private sources, and other academic institutions; and federal sources such as National Sea Grant, NOAA, NSF, and the Departments of Energy and Forest Service (see the Site Review PIER Information Report for details).

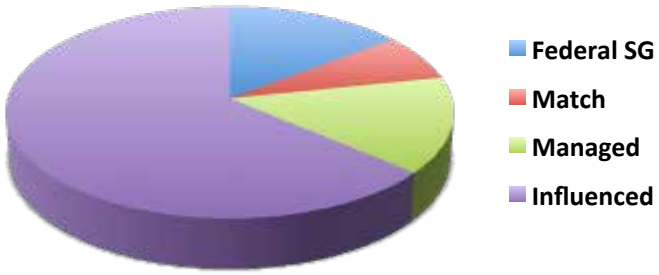
OSG transforms leveraged investments that are comparatively modest in size into significant results. One such example is in the arena of hypoxia and ocean acidification (OA) in Oregon's coastal ocean. OSG's modest investment of $533K in 2010–2013 has leveraged another $3.2M in resources to respond to environmental events threatening the Pacific Northwest's $111M/year commercial shellfish industry. Results include real-time data on the condition of Oregon's coastal waters, stakeholder engagement leading to increased understanding of the causes and consequences of OA, improved hatchery management, a West Coast Governors Alliance letter to President Obama and Prime Minister Harper requesting legislative support, and principal investigators funded by OSG invited to participate on the West Coast Ocean Acidification & Hypoxia Science Panel.

Profile Managed Funds



OSG continues to experience diminishing resources and increased personnel costs. OSG will persist in evaluating our program for efficiencies and invest resources strategically. We anticipate that OSG will continue to provide excellence in service to the state, region, and nation through focused and integrated programming on ocean and coastal issues.

Funding Overview



Recruiting Talent

Research Program

OSG's highly competitive grants program funds marine research in academic institutions throughout Oregon. Supported projects address issues of high importance and societal relevance, and place priority on prediction. The

Projects and Institutions Involved in Competitive Funding Process and Program Development

	2012–14	2012–14	2013–14	2014–16	2014–16	2014–16
	West Coast Regional Social Science	OSG Biennial Funding	Coastal Contaminants and Japanese Tsunami Debris	West Coast Regional Social Science	OSG Biennial Funding	OSG Social Science and Human Dimensions
Pre-Proposals						
Number of pre-proposals	18	47	n/a	16	56	18
Number of institutions (for lead PI only)	39	26	n/a	23	20	7
Full Proposals						
Number of full proposals	8	25	4	7	42	10
Number of institutions (for lead PI and co-PI)	28	17	6	13	15	8
Number of reviews received (total reviewers contacted)	28*	82 (241)	11 (28)	27*	133 (322)	33 (94)

*Reviewers were contacted by separate programs; total number of contacted reviewers is unknown.

New and Continuing Projects and Recruitment of PIs						
New projects funded in Oregon (total)	2 (5)	9	2	1 (2)	8	3
Continuing projects	0	13	0	2	11	0
Number of PIs and co-PIs funded	7	17	6	3	19	8
Number of new PIs and co-PIs funded	7	10	5	2	10	3
Number of institutions supported (for lead PI and co-PI)	5	3	3	3	6	4

program stresses scientific excellence and meaningful collaboration with industry, agencies, communities, and other stakeholders.

During the 2011–14 timeframe, OSG continued to enhance its strong competitive program by adding several new funding opportunities to its portfolio. Competitive funds from the core Omnibus were allocated to support two regional social science competitions (2012–14 and 2014–16) and two state-focused special funding opportunities (Coastal Contaminants and Japanese Tsunami Marine Debris in 2013, and Social Science and Human Dimensions Research in 2014–16). These competitive processes are similar to our biennial competitive funding opportunity, described below, although typically on a more compressed schedule. Finally, matching funds from a National Sea Grant Office initiative to support social science research enabled funding of additional projects in 2012 and 2014 through a Minibus process.

The basic competitive granting framework follows a rigorous process refined over the past several years, with an emphasis on objectivity (see table at top of next page). Briefly, our process consists of a widely distributed Request for Proposals (RFP) soliciting submissions that fall within the OSG Strategic Plan, the National Sea Grant Strategic Plan, and the West Coast Governors' priorities identified in the Regional Research and Information Plan. Recent improvements to the pre- and full-proposal process include external peer review at the pre-proposal stage and clear criteria for evaluating projects' societal relevance. Our overall process ranks pre- and full proposals on the basis of their (1) scientific excellence and (2) societal relevance, and includes evaluations by peer reviewers and a technical panel (for

General Timeline for Oregon Sea Grant Competitive Biennial Project Funding	
October–December (even years)	Plan and draft competitive biennial request for proposals (RFP)
January (odd years)	Release competitive biennial RFP for pre-proposals
February	Pre-proposals due
March	Pre-proposal review: Input from external reviewers; Advisory Council meeting. Encourage full-proposal submission
May	Competitive biennial full proposals due
June–August	Full proposals out for external peer review
September	Biennial full-proposal technical panel review (Scientific Excellence) and Advisory Council meeting (Societal Relevance)
November	Competitive biennial project funding recommendations due to National Sea Grant Office
February (even years)	Projects begin

full proposals only), as well as input from the OSG Leadership Team and Advisory Council. During our most recent biennial call for proposals, a key Extension point-of-contact was assigned to each encouraged full proposal in an advisory capacity, as all projects are expected to include an outreach and engagement component to ensure societal relevance. Through 2013 our competitive proposal process used an upgraded version of our Web-based, password-protected proposal submission, review, and tracking system, called Webnibus. Beginning in 2014 we hope to transition to a new tracking system, such as eSeaGrant, and we partnered with California Sea Grant to use their eSeaGrant installation for our most recent competitions.

During the 2012–14 and 2014–16 biennial cycles, each full proposal had at least three external reviews. A seven-person Science Panel (out of state) met on campus for two full days to discuss the full proposals and helped us evaluate both the written peer reviews and the PIs' responses to those reviews. Panelists and PIs highlight the latter as a best practice that helps correct any reviewer misunderstandings. The Panel produced a jointly written evaluation for each of the proposals. The Sea Grant Advisory Council met a week later to provide user and programmatic advice on societal relevance for each of the highly ranked proposals. Finally, the Leadership Team met to make final proposal decisions for those proposals ranked highly on both scientific excellence and societal relevance.

During the 2012–14 funding cycle and again for 2014–16, we partnered with our regional Sea Grant colleagues in California and Washington to conduct a RFP for the first and then subsequent round of Sea Grant Regional Social Science projects. Each of the four west coast Sea Grant programs (California, University of Southern California, Oregon, and Washington) committed a portion of core competitive funds to support social science proposals with a regional scope. Full proposals were encouraged based on discussions by program directors and other research team personnel. At least three external (out of the investigators' states) peer reviews were obtained for each proposal, and the programs conducted a virtual panel review with three out-of-the-region experts qualified to comment on the various social science disciplines representative of proposals received. For the 2014–16 cycle, OSG engaged members of our citizen Advisory Council to comment on the societal relevance of proposed projects. Proposals were selected based on scientific excellence and societal relevance, with particular preference placed on those projects with investigators and scope that spanned at least two states. Highly ranked and relevant single-state-focused proposals were funded at the individual program's discretion.

Several additional projects supported by non-core OSG sources were awarded during 2011–2014. Matching funds from a National Sea Grant strategic initiative to support social science research were awarded through Minibus grants in both 2012 and 2014, and included partial funding of competitive social science research projects, supplemental engagement efforts, and expansion of our resilience initiative through various activities, such as competitive graduate fellowships. Targeted state efforts include a 2012 workshop on emerging contaminants in coastal waters, suggested by the OSG Advisory Council, and a subsequent RFP on Coastal Contaminants and Japanese

Tsunami Marine Debris. We also recently supported a special call for Oregon Social Science and Human Dimensions Research proposals and are recruiting graduate fellows on the topic of resilience and adaptation.

Program Development

Each year, OSG retains a program development pool, from which small grants (most less than $10,000) may be directed to take advantage of new opportunities that are time-dependent, creative, high-risk, or "proof-of-concept" research that advances our mission. These seed monies have the potential to catalyze major new research efforts or provide rapid response to timely events. For example, OSG provided funding for ecological assessment of possible invasive species on a dock that washed ashore in Oregon as part of the debris field from the 2011 Tohoku tsunami. We recently supported a citizen science effort to address seastar wasting syndrome in our coastal waters, as well as helped fund and organize a two-day regional symposium on seastar wasting syndrome. OSG also has provided meeting and special event sponsorship from this pool, such as support for the Salmon Bowl, our regional high school math and science competition leading to the National Ocean Sciences Bowl. During the past four years, OSG has occasionally applied these funds toward partial support of innovative proposals submitted to the biennial call that showed particular promise. For example, in 2012, we provided one year of modest support for a project addressing mating success of wild coho salmon from Oregon's Umpqua River, based on strong recommendations from our Advisory Council. This project funded a master's thesis and resulted in the collaborative team from Oregon State University, NOAA's Northwest Fisheries Science Center, and Oregon Department of Fish and Wildlife receiving grant support in excess of $100,000 from the U.S. Army Corps of Engineers to continue the work. OSG continues to refine its Program Development process, and anticipates exploring opportunities to use these funds to develop new and emerging program areas through activities such as workshops and targeted competitive proposals.

Students

OSG takes particular pride in engaging and supporting students—the future ocean workforce. In 2011–14 OSG spent nearly $600,000 in competitive funds to support students associated with research projects across seven OSU colleges and five other state institutions, and OSG's fellowship program provided $265,000 for our graduate, undergraduate, and recently graduated student fellows. Our state partners find students at both the graduate and undergraduate levels very valuable and have provided more than $100,000 in matching support for our programs. Student fellows are typically placed under the mentorship of a key leader for up to a year, often with terms extended through additional support from host offices, to provide technical expertise on marine and coastal issues to legislators, who help the students develop knowledge of the legislative and state processes as they relate to coastal and ocean issues and encourage the students to work with various levels of government and with private and state resources organizations.

In addition, we provided learning experiences for many students through other internship and student opportunities connected with OSG faculty throughout the state, including mentorship for OSU PROfessional and Managerial Internships in State Employment (PROMISE) students, NSF-supported Increasing Diversity in Earth Sciences (IDES) scholars, and several program-affiliated graduate students. Over the past four years, we have supported graduate scholarships in honor of our former director, Bob Malouf, for six students engaged in highly relevant marine activities. And 26 students are alums of the Oregon Sea Grant Summer Undergraduate Scholars program, initiated in 2010 to provide students opportunities to work directly with state agencies, federal agencies, and policy makers. The summer scholars program is on hiatus for 2014, but will return in 2015 with refinements suggested by former mentors and students.

OSG facilitates student participation in national and regional fellowship opportunities. Over the past four years, two Oregon students were selected as NOAA Coastal Management Fellows, and six OSG-supported students were selected for the prestigious National Sea Grant Knauss Fellowships. In 2012 and 2013, OSG proudly assisted the state's first and second recipients of the NOAA Sea Grant / NMFS Population Dynamics Fellowships, which provide three years of support for doctoral students. We have also invested in fellowship opportunities through partnerships with California, University of Southern California, and Washington Sea Grants. In 2011, the programs secured $300,000 from National Sea Grant to fund four two-year fellowships in support of the West Coast Governors Alliance (WCGA) on Ocean Health. Each student contributed to state and regional efforts aligned with WCGA priorities, and they worked closely with each other and the four Sea Grant hosts to promote regional initiatives, such as marine debris activities. Outcomes of the fellows' work are in line with OSG program goals. Details of the fellows'

OSG Program Development and Students: 2010–14

Program Development	2011	2012	2013	2014
Number of PD proposals submitted	13	20	7	6
Number of PD proposals funded	9	8	3	4
Number of institutions supported (for lead PI and co-PI)	2	3	4	3

OSG Students	2010–11	2011–12	2012–13	2013–14
Fellows	14	25	27	28
Research students	22	25	33	40
Affiliated students (e.g., those working with OSG personnel)	77	117	96	69

experiences are available through the WCGA blog: http://westcoastoceans.wordpress.com

It is not only students who benefit from our fellowship support. Building on the success of our WCGA fellows, three state agencies (the Governor's Natural Resource Office, Oregon Department of Fish and Wildlife, and Department of Land Conservation and Development) contributed $60,000 to support an Oregon Ocean Planning Fellow in 2013–14. This fellow conducted policy analyses of state and regional ocean management issues such as ocean acidification and natural resource management in support of the National Ocean Policy Implementation Plan, the West Coast Regional Planning Body, and the Governance Coordinating Committee. OSG state Legislative fellows coordinated the activities of a bipartisan caucus of coastal legislators during the 2011 and 2013 Oregon legislative session (recognized by the group as a "tremendous asset"). Finally, our Natural Resource Policy Fellow served the Oregon Emergency Management agency in 2013 with funding from our program in support of their seismic retrofit programs, and was recruited by Oregon Infrastructure Authority, which invested nearly $40,000 to continue his work through 2014.

We continue to promote the overarching Sea Grant Scholars Program for all OSG-supported students, which (1) creates a community of OSG Scholars including students, principal investigators, and OSG Extension, Education, and Communications faculty; (2) improves student identification with OSG and its mission; and (3) fosters professional development (such as job searches and scientific presentations) relating to coastal and ocean sciences at Oregon universities. Our inaugural Scholars Day in 2012 showcased the work of 24 OSG-supported students through panels, presentations, and posters; a second event is planned for November 2014.

Stakeholder Engagement

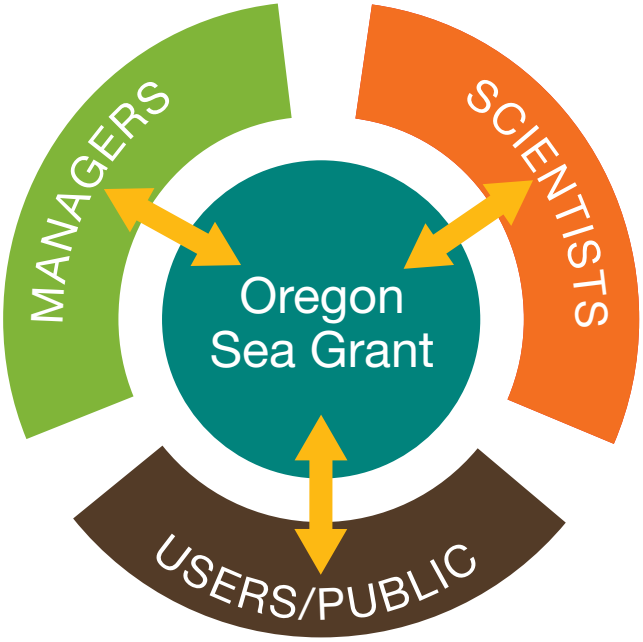
Overview

Oregon Sea Grant (OSG) has a 40-year history of working directly with stakeholders on critical social, economic, and environmental issues. Our stakeholders include scientists; coastal residents and users; businesses; local, state, federal, and tribal agencies; and the general public. OSG also manages the Visitor Center at the Hatfield Marine Science Center as a public science learning facility and free-choice learning laboratory. The Visitor Center draws more than 150,000 visitors annually.

Our Advisory Council of marine industry and coastal community leaders provides continued external review of and advice to the program. Nearly all OSG staff work collaboratively to engage, listen to, inform, and assist a wide range of stakeholders, such as K–12 teachers and students, community and industry groups, conservationists, state resource managers, and the public.

OSG's Outreach and Engagement (O&E) efforts are reflected in designed extension, education and communication activities that effect behavior change through informed stakeholder decisions. Our engagement programs are focused on outcomes-based objectives implemented with a variety of education processes and mechanisms, often in a collaborative partnership employing needs assessment, free-choice and formal learning techniques, and evaluation over a continuum of time. Needs assessments are used to formulate and modify programs in the strategic planning and implementation plans, Omnibus proposals, annual plans of work for individuals, and problems or opportunistic issues and needs that arise. Our engagement process helps investigators incorporate outreach and education elements into their research proposals.

The elements that constitute the O&E framework, both currently and as the framework evolves, are described below.



Sea Grant is recognized as a "boundary organization," aiding communication and understanding among and between scientists, managers, and the public.

Extension

Many Oregonians know the OSU Extension Service as a trusted source of information for today's often-complex social and personal decisions. Extension serves as the "connective tissue" between scientists, managers, and the public. This is a two-way process in which engagement with coastal stakeholders informs science planning and investment and, in turn, stakeholders use the results of research to support informed decisions about the use and conservation of coastal resources.

OSG Extension is one of five program areas (along with Agriculture and Natural Resources, 4H, Forestry and Natural Resources, and Family and Community Health) of the Oregon State University (OSU) Extension Service. Our Extension agents, associates, and specialists take an active role in shaping OSG's strategic and implementation plans, working closely on programs and projects with both OSG communications and education faculty.

Field-based personnel are assigned to coastal geographic areas and are responsible for developing relationships and educational programs that respond to local emerging issues and needs. Field-based personnel also have statewide responsibility within their subject-matter expertise that includes coastal hazards, fisheries, community development, aquatic invasive species, seafood product development, or watersheds and water resources. This dual system allows field staff to develop specialized knowledge and encourages teamwork within OSG and with our partners.

Campus-based personnel have subject-matter responsibilities and typically operate from the OSU campus in Corvallis and the OSU Hatfield Marine Science Center (HMSC) in Newport. Campus-based staff conduct education and O&E programs with coastal audiences. In addition, they support field-based agent activities in their areas of exper-

tise and conduct interdisciplinary research. The activities of field-based agents and campus-based staff vary according to the needs of the state and specific regions, and currently focus on marine renewable energy, coastal hazards resilience, climate-change adaptation, seafood marketing and safety, fisheries management, community decision-making, community development, aquatic invasive species, and a variety of other issues as they emerge.

Extension personnel are increasingly more involved with OSG-funded research. During the 2012–14 competitive research proposal cycle, OSG Extension staff served as points of contact for principal investigators of submitted proposals. This partnership led to substantial improvement in the outreach elements of full proposals as compared to pre-proposals. For example, Bill Hanshumaker was the point of contact for researchers applying for OSG funding in 2014–16. He facilitated connections between Extension and other OSG personnel and assists in the development of O&E plans, including evaluation plans, for funded projects.

OSG Extension has a strong record of responding to emerging issues and working collaboratively with stakeholders (and stakeholder groups) as well as university, agency, and industry partners. We pursue projects integrated within OSG such as:

- clean vessel project
- working waterfronts
- wave energy (in partnership with communities and the Visitor Center)
- Japanese tsunami marine debris (and aquatic invasive species)
- climate change
- water quality

Education

OSG's full-time and contract staff dedicated to education manage a public educational facility; provide marine education and professional development in STEM education for public, school, and professional audiences throughout the region; provide significant education for scientists in communicating their work; and conduct pioneering research in free-choice learning. The Hatfield Marine Science Center Visitor Center is operated by OSG with the help of more than 100 volunteers, and serves as a social laboratory for free-choice learning, having helped raise more than $5 million in external funding for programming and research over the past seven years. OSG Education faculty have established numerous diverse and strong partnerships with substantial capabilities for educating students and the public in marine sciences. These collaborations have proven to be a highly effective way to leverage resources, improve our problem-solving capabilities, and create new and exciting opportunities for stakeholders.

Free-choice learning is all about deciding what, where, and how we want to learn over the course of our lifetimes. It's the learning that takes place all the time, outside of the classroom, no matter how young or old you are. Free-choice learning is a way of describing the learning that happens when choice and control in learning shifts from educators to learners. Such self-directed learning is typical of most of the learning that occurs across the lifespan. Indeed, nearly all our current educational activities are free-choice learning experiences for participants.

Since 2003, OSG has led the way at Oregon State University and within the Sea Grant National Network in bringing current research and practices on free-choice learning to marine education efforts for both schools and public audiences. OSG's focus on such free-choice learning has resulted in three new graduate programs at OSU, new partnerships regionally for programming, revamped programming and exhibits at the Hatfield Marine Science Center Visitors Center, and the development of a robust research agenda. OSG is now building on these successes, rethinking our entire education and ocean literacy effort to focus on free-choice STEM learning across the lifespan and learning contexts.

In 2010, OSG educators carried out a strategic planning process that identified the following goal: Develop opportunities for learners of all ages and experience levels in marine and aquatic sciences through (1) high-quality marine science programming; (2) research, assessment, and evaluation, and (3) professional development for educators. Our entire program builds on strong evaluation skills among faculty not only to help us deliver high-quality programming, but also to learn from our own free-choice learning education programs and to educate other developers, programmers, educators, and scientists in the arts and sciences of science communication, education, and outreach.

Communications

Effective communication about science—understood broadly—is what each element of OSG is working to achieve. Since its earliest years in the 1960s, OSG has recognized the value of employing professionals whose education and experience make them specialists in the arts and science of science communication. The OSG Com-

Unique approaches #1

Interactive displays

OSG engages stakeholders using techniques ranging from interactive displays to workshops, tours, and professional-development training. An innovative approach initiated last year was working with cartoonist Jan Eliot to communicate about invasive species with K–12 students. Using her syndicated cartoon, *Stone Soup*, Ms. Eliot worked with OSG staff to develop a series of panels that addressed such critical concepts as releasing classroom animals into the local environment.

munications group has articulated these abiding functional goals:

1. To advance OSG's public mission—to help people understand, conserve, and use ocean and coastal resources—by creatively deploying the tools of professional science communication;
2. To provide in-house communication expertise, services, and products for OSG personnel in support of the mission;
3. To advance and exemplify the state of the art in professional science communication and OSG's reputation for quality in objective communications;
4. To increase public understanding of OSG's capabilities, accomplishments, services, and products, but to be clear with internal and external audiences to distinguish Program publicity from our norm of objective science communication.

As has been the case for decades, the Communications group continues to be closely involved with the other Sea Grant staff, faculty, and funded researchers in developing communication strategies and producing materials that support their activities and advance the program's mission. Specific capabilities of OSG Communications include

1. Professional science communication that reaches diverse stakeholders through multiple media (print, electronic, digital) and formats (including publications, video, Web, and social media such as OSG blogs, Facebook, and Twitter);
2. Professional experience and advanced expertise in communication methods and design, including communication consultation and planning; assessment and evaluation; writing, photography, video production, and editing; Web and social media development and usability; graphic design and production; and risk communication methodology;
3. Communication leadership, oversight, and coordination through a Communications program leader with professional training in and experience with each method and tool in (2).

The Communications group has a reputation for innovation, having produced: videos for the Public Broadcasting System as well as YouTube; books with commercial as well as academic publishers; one of the first Sea Grant websites, the first to meet disability standards, and the first to host online video. While "social media" seem like the coin of the publicity realm today, we were early producers of blogs, podcasts, a Facebook page, and a Twitter account. And while social media hold the promise of encouraging genuine

(though remote) two-way communication, we most highly value communication that supports and responds to stakeholder interests and decisions, and benefits the common good. Supporting this professional goal, in recent years we have developed expertise in and promoted communication research, as demonstrated in our publication series, Public Science Communication Research and Practice, and by five first-author journal articles published in the previous two years.

Leadership

Oregon State University

Oregon State University has tremendous capabilities in coastal and marine science and engineering research, education, and engagement. Eight of the 11 academic colleges and multiple centers, institutes, and programs are engaged in a diverse array of marine programs. A very important development for marine studies at OSU and for the interests of OSG is OSU's initiation of a $200M Marine Studies Campus at the Hatfield Marine Science Center and the main campus in Corvallis. The OSG director serves on the Steering Committee for the Marine Studies Campus, and the director and Extension leader serve on various working groups (e.g., research, outreach and engagement). According to the university, *The Marine Studies Campus represents OSU's strategic effort to achieve OSU's full potential as a leader in marine studies by bringing together key resources for research, education, and engagement*. The campus will support teaching, research, and engagement activities in marine studies, through "a deep immersion experience for students in marine science, technology, engineering, mathematics, and the arts and humanities—an innovative approach which will link natural sciences with theoretical and empirical capabilities in the social sciences and enhance OSU competitive national standing." New faculty will be hired under the campus plan and new buildings constructed. The university envisions "greater relevance to coastal communities" through the activities of the Marine Studies Campus, and given the historic relationship OSG enjoys with those communities, our roles as a catalyst of activities and as a bridge between OSU and the coast offer great potential.

In addition to the Marine Studies Campus, the OSG director serves on the advisory board for the Cooperative Institute for Marine Resources Studies. The OSG Extension program leader serves on the Outreach and Engagement Cabinet, the Outreach and Engagement Council, and the Extension Program Council for the university. Additionally, the OSG Extension leader serves on the Executive Committee of the Hatfield Marine Science Center and the advisory board of the Coastal Oregon Marine Experiment Station.

State of Oregon

The OSG director is a member of Oregon's Ocean Policy Advisory Council (OPAC) and chair of the Oregon Scientific and Technical Advisory Committee (STAC). OPAC directly advises the state's Governor's Office and the state Legislature on marine issues, particularly marine reserves. STAC was created by the Oregon State Legislature to provide the best available, independent scientific and technical advice.

Sam Chan chaired the Oregon Invasive Species Council (OISC) in 2011 and will resume chairmanship in 2015. The purpose of OISC is to conduct a coordinated and comprehensive effort to keep invasive species out of Oregon and to eliminate, reduce, or mitigate the impacts of invasive species already established in Oregon.

Unique approaches #2

Citizen science

In the past year, two new grant-supported research programs substantially increased OSG's efforts to support public participation in science research regionally. In October, OSG was awarded an NSF Advancing Informal Science Education Full Development award, in partnership with University of Washington and the Coastal Observation and Seabird Stranding Network (COASST), to develop a marine-debris citizen-science protocol spanning COASST's current range from northern California through Alaska. A related study funded by the west coast Sea Grant programs and partnering UW and OSG with University of California, Davis, seeks to create and validate a model of factors influencing participation and engagement of adult volunteers in the existing COASST seabird-monitoring citizen-science project.

Partnerships

Oregon Sea Grant (OSG) has long valued and invested in partnerships and collaborative efforts. Our ability to achieve our goals is dependent upon our ability to maintain and enhance partnerships within the academic community; with local, state, regional, federal, and tribal partners; with other Sea Grant programs; and with the broader stakeholder community. Primary partnerships include Oregon universities and faculty, informal and formal educators, marine scientists, undergraduate and graduate students, postdoctoral investigators, state and federal government agencies, local school districts, marine-related businesses, other Sea Grant and NOAA institutions, marine resource organizations, professional associations, and interested members of the public.

In addition to these longstanding partnerships, OSG looks for ways to increase our connections with groups at all levels. A new state partner, Wild Rivers Coast Alliance (WRCA), supports economic development opportunities on Oregon's south coast, and our Gold Beach and Coos Bay Extension agents work with them on issues such as invasive vegetation eradication and coastal tourism opportunities. We are active in regional partnerships for fellowship and social science research opportunities with our neighboring Sea Grant programs in California and Washington, and our faculty engage in research projects with Sea Grant programs across the nation, including climate surveys that involve several other Sea Grant programs (CT, HI, IL-IN, LA, MD, MN, and WA).

OSG is also a principal partner in the National Science Foundation Center for Ocean Science Education Excellence (COSEE) Pacific Partnerships program, which works to develop education programming and research opportunities for community college students, faculty, informal-science educators, and marine-education volunteers in Oregon, Washington, California, and Hawaii. State academic institution partners involved in COSEE programming include faculty from University of Oregon and Oregon Health and Science University, as well as those from OSU. In addition, we partner with the Oregon Coast Aquarium on nearly a dozen ocean literacy programs and directly support Lincoln County School District efforts toward continuing education for their teachers.

Unique approaches #3

"Wet Pet Vet" International

OSG continued work with international partners as Dr. Tim Miller-Morgan led and co-instructed a number of workshops related to fish health management and biosecurity within the ornamental fish industry. Miller-Morgan traveled to the state of Kerala, India, to lead farmer/exporter training sessions at the Sustainable Ornamental Fisheries Conference in Kochi, Kerala, India; the International Ornamental Fish Technical and Trade Conference, Jakarta, Indonesia, to lead a fish health management workshop for marine ornamental fish exporters; and to Oslo and Bergen, Norway, to run two workshops for ornamental fish retailers. He also began working with Project Piaba, a project based in Manaus, Brazil, that aims to facilitate and improve the sustainable ornamental fishery on the Rio Negro. Miller-Morgan's primary role is to assess overall fish-health management throughout the chain of custody, from collection to export; suggest improvements; and develop a train-the-trainer program for individuals identified by the local industry who will become educational resources for the fishers, middlemen, and exporters and serve as key contacts with international trade and educational organizations.

Examples of Partners Who Supported Oregon Sea Grant Projects, 2010–14

International/Regional	Centers for Ocean Science Education Excellence, West	Pacific Fishery Management Council
	West Coast Governors' Agreement on Ocean Health	Marine Technology Society
	NOAA West Coast Regional Collaboration Team	Northwest National Marine Renewable Energy Center
	National Association of Networked Ocean Observing Systems	
Federal/Tribal	Karuk Tribe	National Earthquake Hazards Reduction Program
	U.S. Coast Guard	Confederated Tribes of Coos, Siletz, Umatilla
	NSF, USFWS, USGS, BLM, NPS, BOEM	Yurok Tribe
	American Veterinary Medical Association	Warm Springs Tribe
	Aquatic Nuisance Species Task Force	National Association of Attorneys General
	Associated Koi Clubs of America	National Tsunami Hazard Mitigation Program
	Bonneville Power Administration	NOAA Marine Debris Program
	US Department of Energy	US Bureau of Ocean Energy Management
	NOAA/OAR: PMEL, CIMRS NOAA/NMFS: NWFSC, SWFSC NOAA/NESDIS: CIOSS NOAA/NWS	
State of Oregon	Governor's Natural Resource Office	Heceta Head Coastal Conference, Inc.
	Oregon Commodities Commissions	Business Oregon
	Oregon Departments of Agriculture, Education, Energy, Environmental Quality, Fish and Wildlife, Forestry, Geology and Mineral Industries, Land Conservation and Development, Parks and Recreation, State Lands	Oregon State Treasury
	Oregon Invasive Species Council	Oregon Coastal Zone Management Association
	Oregon State Legislature Coastal Caucus	
	Oregon State Marine Board	Oregon Office of Emergency Management
	Travel Oregon	

Continued on next page

Examples of Partners Who Supported Oregon Sea Grant Projects, 2010–14 *continued*

Sea Grant Programs	Alaska, California, Connecticut, Florida, Hawaii, Illinois/Indiana, Louisiana, Maine, Maryland, Michigan, Minnesota	New York, North Carolina, Rhode Island, South Carolina, USC, Washington, Texas, Delaware, Ohio, Wisconsin
Local: Municipal and County	Cities of Albany, Coburg, Cottage Grove, Creswell, Dallas, Junction City, Monroe, Newberg, Scio, Sodaville, Sweet Home, Tangent, Veneta	
	Oregon Coast Watershed Associations and Network of Oregon Watersheds	
	Soil and Water Conservation Districts: Clatsop, Lincoln, Marion, Polk	
	Ports of Astoria, Coos Bay, Gold Beach, Newport. Reedsport, Port Orford	
	Fishermen Advisory Committee for Tillamook, Fishermen Interested in Natural Energy, Scientist and Fisherman's Exchange	
	Network of Oregon Watersheds	
	Newport Sea Lion Docks Foundation	
	Port Orford Ocean Resource Team	
Academic Institutions and Programs	Tillamook Bay Community College	
	Schools and school districts: Coos Bay, Corvallis, Cottage Grove, Eddyville, Lebanon, Lincoln, Marshfield, Neskowin Valley, Portland, Sweet Home, Tillamook, Toledo, Warrenton, Westwind, Willamina	
	Hatfield Marine Science Center	
	Oregon Institute of Marine Biology, University of Oregon	
	Oregon Coast, Clatsop, Clackamas, and Tillamook Bay Community Colleges	
	Colleges and universities: Eastern Oregon University; Lewis and Clark College; Linfield College; Oregon Health and Science University; Portland State University; Stanford University; Universities of Arkansas, California-Berkeley, California-Davis, California-San Diego, California-Santa Barbara, California-Santa Cruz, Florida, Hawaii, Maryland, Massachusetts, Minnesota-Duluth, Montana, Mississippi, North Carolina-Chapel Hill, Rhode Island, Washington, Texas; Western Oregon University	
Industry/Business/NGOs	New Seasons Market	Whiskey Creek Shellfish Hatchery
	Taylor Shellfish Hatchery	Hewlett-Packard
	Oregon Coast Aquarium	Georgia Pacific
	Oregon Public Broadcasting	Surfrider Foundation
	Ecotrust	Weyerhauser Company
	Englund Marine Supplies	Wild Rivers Coast Alliance
	Local Ocean Seafood	Oregon Salmon Commission
	Oregon Dungeness Crab Commission	

Collaborative Networks

Network Activities Across Sea Grant and NOAA

Oregon Sea Grant (OSG) works extensively with NOAA partners, other Sea Grant Programs, and the National Sea Grant Network. Many examples have already been provided. OSG NOAA partners include the NW Fisheries Science Center, PMEL, the NOAA cooperative institute CIMRS, Coastal Services Center, National Weather Service, National Estuarine Research and Reserve, NOAA Climate Office, OCZM, and the NOAA fisheries facilities and NOAA Marine Operations and Pacific Fleet at Newport, Oregon.

Some other examples:

- The four west coast Sea Grant programs have a strong working relationship and formal collaborations relative to the Regional Research and Information Plan, West Coast Governors' Agreement, and Regional Invasive Species program. Also, the OSG director, along with the other West Coast Sea Grant directors, historically works closely with the Western Regional NOAA Team.
- Joe Cone, as principal investigator, has worked closely and collaboratively with the Washington, Minnesota, Illinois-Indiana, Maine, Maryland, North Carolina, South Carolina, Florida, and Louisiana Sea Grant programs on projects relating to climate communication and community adaptation and planning. Funds were provided by each program, by the NSGO, and by the NOAA Climate Program (SARP).
- Dave Hansen worked with Sea Grant colleagues from Texas, Maine, Minnesota, Florida, and Wisconsin—as well as the National Sea Grant office and NOAA Coastal Services—to plan and conduct the Sea Grant Academy in 2013.
- Pat Corcoran serves as an Oregon representative to the Extension Disaster Education Network (EDEN).

OSG faculty also serve in a number of positions in the National Sea Grant network, such as

- Joe Cone—Member of the national Hazard Resilient Coastal Communities focus team (2008–2013)
- Pat Corcoran—Member of the Sea Grant Hazard Resilient Coastal Communities focus team
- Melissa Metz—Current candidate for vice chair of Sea Grant Fiscal Officers Network
- Dave Hansen—Secretary/treasurer of the Assembly of Sea Grant Extension Program Leaders (2011–2014)
- Shawn Rowe—Representative on Sea Grant Education Network
- OSG leaders have participated actively in the Sea Grant Association as delegates (Brandt, Holdren, Walker) and alternates (Cone, Hansen, Kolesar)

Success in Regional and National Competitions

We continue to be successful in national competitions across the National Sea Grant Program, NOAA, and other federal agencies including NSF, Fish & Wildlife Service, Forest Service, and the Department of Energy (see the Site Review PIER Information Report for details). Many of our projects are multi-institutional, with OSG either leading the project or providing a critical component to the work. We have been continually successful in national competitions such as the Knauss Fellowship, the National Marine Fisheries Service / NOAA Sea Grant Population Dynamics Fellowship, and NOAA Sea Grant National Initiatives. Successes since 2010 include National Science Foundation funding for Centers for Ocean Science and Educations Excellence (COSEE), NSF rapid response to the Gulf oil spill, National Sea Grant strategic initiatives in invasive species and aquaculture extension, and funding from the National Climate Office and the USDI Renewable Energy Industrial Economics Program.

OSG also has been instrumental in leading the west coast Sea Grant programs in regional initiatives. OSG was an essential piece of the effort in the development of the west coast Sea Grant program of scientists and climate-change adaptation practitioners to define "successful" adaptation strategies ($264,294) and the companion Oregon Sea Grant funding ($79,554) to support 100 scientists and federal, state, tribal, and local climate-adaptation practitioners and coastal management professionals engaged in workshops in the participating states over the past year. Presentations on defining successful coastal adaptation for climate change reached more than 700 attendees in the past year, including 60 attendees at the inaugural National Adaptation Forum in Denver, Colorado. Project guiding principles for adaptation are targeted to local and state-level coastal managers and practitioners, their stakeholders, and the interested public.

Program Changes Resulting from Previous Review and Internal Initiatives

The 2010 Site Review of Oregon Sea Grant identified five "best management practices," and no "recommendations" requiring response. The SRT made a number of "suggestions" that "the program may want to consider." Suggestions and responses are noted in the table that follows.

Suggestions from SRT 2010	Program Response
The director's monthly conference call with the full OSG staff is a very good mechanism to maintain routine communications about Sea Grant issues. The director should consider periodically (quarterly?) inviting the NSGO Program Officer (PO) to participate in these calls for the purpose of having the PO report on national activities and events and to keep the PO abreast of OSG activities.	During the tenure of Director Brandt, the NSGO Program Officer was invited, on occasion, to participate in these calls. Separately, the program officer has joined in occasional Leadership Team discussions. Results from a 2012 internal survey indicated that cross-program communication might be better structured. As alternate mechanisms are determined, the NSGO PO will be invited to participate where appropriate.
The SRT was most impressed with the experience, knowledge and commitment to Sea Grant of the Marine Advisory Council members. Given the importance of the Advisory Council (AC) to OSG planning and execution, it is important that new members with fresh ideas be regularly added to the AC. The recent addition of four new members was a positive step in this direction and we encourage OSG to continue to add new members. Term appointments should be considered when appointing new members.	The Advisory Council is an unquestioned asset for OSG. Decades-long participation and changes in life (retirement, career change) have led to the departure of six AC members from the 2010 group. But three new members have been added, and others will be once Director Walker has an opportunity to recruit for the Council.
The SRT appreciates and supports the opportunity for Extension faculty to be appointed to academic units within OSU. The SRT also recognizes the challenge that Extension faculty face when reviewed for tenure by traditional faculty. We urge the university leadership to continue to support Extension as an equally important professional activity in the tenure process. Providing an Extension faculty member to the mentorship teams for new faculty members should be considered.	OSG and the Division of Outreach and Engagement will continue to stress the need to support extension as an important part of the promotion-and-tenure process for Extension faculty.
The director may also want to consider an annual marine science workshop that involves all statewide marine science interests including scientists in federal and state agencies.	From 2011 to 2013, OSG partnered with a civic group to present the annual "Heceta Head Conference," focusing on marine science topics and including federal and state agency scientists as well as students and coastal leaders. In October 2014, OSG will solely host the next version of that conference, which is anticipated to be a continuing annual event along the same lines.

Through the creation of the OSU Marine Science Council, the ability of the OSG director to communicate and coordinate with OSU marine science faculty has been greatly enhanced. Since OSG is a statewide program, the director's ability to similarly communicate and coordinate with faculty at other OR universities should similarly be enhanced. We support the director's plans to provide seminars for non-OSU faculty on the OSG mission and opportunities for the faculty to participate in ORSG programs and activities.	Prior to the 2012 research RFP, the director presented to faculty at the two other large research universities—University of Oregon (UO) and Portland State University. Also, further outreach to other campuses is shown in the addition to our Advisory Council of the director of the UO marine lab (Oregon Institute of Marine Biology).
Using the OSU mission statement as its foundation, OSU should consider broadening its capital improvement campaign to include a marine component to motivate marine science and Extension donors to contribute to the university and capture increased private program support by marine science and outreach stakeholders and interest groups.	In 2014 OSU began the development of a $200 million Marine Studies Campus, in which Sea Grant intends to play a lead role.
With NOAA's addition of a new Marine Operation Center in Newport, Oregon, there will be significant public interest in understanding NOAA's mission and the strategic goals the fleet supports. We commend OSG for proactively looking into ways to bring its strong education and outreach capabilities to further partnerships with NOAA and to help NOAA achieve its marine operations mission. We suggest that OSG and NOAA continue to discuss ways to enhance collaborations on ocean ecosystem and climate research conducted from the NOAA fleet. The SRT believes that by integrating OSG capabilities with NOAA's ocean observing programs, a better understanding will emerge of how the productivity of the California Current Ecosystem varies over time. The public and decision makers will benefit by understanding the implications of these ecosystem changes through ORSG outreach. With Drs. Brandt's and Spinrad's knowledge of and connections to NOAA programs, we encourage the university to look for opportunities for ORSG to play a role in helping NOAA expand its science and outreach portfolio in the state and region.	In November 2012, the OSG director and Education leaders met with leadership at Marine Operation Center-Pacific (MOC-P) to discuss possible partnerships for outreach, including OSG potentially managing volunteer-led tours of MOC-P facilities, and joint tours of vessels and docs for public outreach and professional development of educators. Since then, OSG Education staff have worked regularly with MOC-P staff to organize numerous tours of vessels and docks each year, as part of volunteer training, summer camps, school programs, and professional development of educators. OSG also provided resources and assistance to develop informational signs for the MOC-P facility.
The cutting-edge work that models scientist-stakeholder engagement processes to achieve outcomes should be published in appropriate applied social science/natural resource journals and/or presented at related professional conferences and symposia.	Assistant Director and Communications Lead Joe Cone has produced five articles (as lead author) published by professional journals and three additional reports published by OSG. Cone also presented his climate communication research and engagement work at professional conferences and to staff at NOAA's National Climate Data Center.

We note that OSG lacks an Extension agent in the Astoria area, and suggest that this position be filled as soon as possible. We commend the OSG for looking into collaborative ways to bring a Columbia River Extension agent into the program.	OSG is constantly looking for partnerships and innovative ways to support important positions. We continue to look for support for a Columbia River-focused position but also for fisheries and economic development positions on other parts of the coast.
The SRT suggests that OSG continue to work closely with the Oregon Governor's office as they finalize research priorities for regional ocean partnership activities under the West Coast Governors Agreement. The SRT believes that these research priorities will ultimately mirror the research objectives and capabilities of the ORSG Program.	In 2011, Sea Grant programs in California, Washington, and Oregon partnered to create two-year fellowships in support of the West Coast Governors Alliance (WCGA) on Ocean Health. The four fellows ultimately chosen, following a rigorous selection and matching process, were placed within an agency in each of the three states and staffed at least one of the WCGA Action Coordination Teams (ACTs).